

MODIS sensor Working Group (MsWG) Summary

August 11, 2004

Attendance: Stuart Biggar, Vincent Chiang, Roger Drake, Hector Erives, Shaيدا Johnston, Gerhard Meister, Chris Moeller, Junqiang Sun, Gary Toller, Eric Vermote, Zhengming Wan, Robert Wolfe, Aisheng Wu, Jack Xiong

Scheduled Agenda

Item 1: L1B LUT delivery

No LUT delivery since last report.

Item 2: Instrument Operation

JX) Aqua MODIS is in nominal operation. Terra MODIS had some data loss due to failure of 2 supersets, assigned to MISR, of SSR PWA on July 31 and the effort of moving 1 superset from Trash buffer to MISR buffer on August 3.

Item 3: Terra B29 Ch4 gain changed on day 208

JX) Terra LWIR PV Band 29 detector 4 (in PO) b1 gain changed when Terra passed over the SAA on July 26, day 208 at 13:45 GMT. Most of the spacecraft anomalies and this kind of detector change happen in that area. The NEdT also increased for that detector. Page 2 shows the trending of detector 4 gain b1 and NEdT in that particular granule.

RD) This is the first time we have the anomaly on B29, and it's different than B28 or B30 recently. In the other LWIR bands, there were some unstable detectors early in the mission at the time of out-gasing. Had this happened before but we didn't notice?

JX) We have been tracking detectors daily in the same details. This happened only recently. If something happens to detector and returns to normal immediately, then we can not track it because we don't check for every scan.

EV) Will someone investigate the cause of this from SBRS? or give us some partial conclusion.

RD) With respect to LWIR, we have looked into this early in the mission but did not see anything. I will need to talk to detector division people about what happen recently and get back to you.

Item 4: Collection 5 in L1B

JX) We talked about this last time (*see last report*). Basically they are (1) de-striping will be put beyond L1B, (2) Band 21 mirror-side dependent fixed b1, and (3) to add detector dependent LUT for SWIR OOB correction.

RW) We expect a minor change of meta-data related to geo-location and will provide information.

Around the Table

Participant: Eric Vermote – Striping on Land bands (Terra)

EV) As far as Land's concern, the striping issue is the most important, and it's out of spec in uncertainty. We looked at Atmosphere de-striping method and we need more test on that. For collection, we would like to at least understand the cause of the striping in the SWIR bands. We need some documents of that.

JX) We have document for that. The problem is the electronic cross-talk. A lot of tests have been done using SRCA and the Moon data, but it's very difficult to fix. Terra Band 7 some detectors SNR were out of spec pre-launch.

RD) The cross-talk is also a signal dependent effect and it's not a coherent effect. The focal people (*SBRS*) cannot do anything without the data. Now the instrument is aging, they

- would request focal plane bias sweep (Vdet) test data in order to investigate the focal plane anomaly. We probably do not need to change the Itwk at all, just need the Vdet sweep.
- CM) Even if we can understand more of the cause, is there anything we can do about it? If this is the first year of the mission I would suggest to do more test to understand, but this is probably the instrument is aging.
- RD) I agree. The only thing we can do is to change the focal plane bias, and that will change to another epic as well. I need a set of direction from Jack on what should we do.
- JX) Roger and I did spend some time on the Itwk/Vdet sweep and macro related to IOT, also looked into the risk of never bringing detectors back. NASA HQ requires any instrument configuration change to be approved by HQ after the failure of the SD screen door.

Participant: Chris Moeller – Terra SWIR OOB correction using new ccoefficients

- CM) I did look at the data Vincent sent me that used new SWIR x_oob_1 coefficients without the offset. The impact is small about 0.5% on Band 26. It tends to drive the radiance a little bit bias to negative side. I would like to see the correction using B25 instead of B28 (since B28 is getting noisier) and suggest MCST send me the data.
- VC) Have you looked at B5-7 sub-frame difference with the new coefficients? Jack showed some improvement on sub-frame difference at the Science meeting.
- CM) No, I didn't. Maybe Eric can take a look at that. (*separate discussion*)

Participant: Gerhard Meister – Ocean will not put de-stripping in the data processing.

Participant: Stuart Biggar – The results of MISR new version data match better to MODIS.

The CALCON (Logan, UT) will be in 2 weeks. Next MsWG meeting scheduled on September 1, 2004